

B) IN THE CLAIMS

1. (Currently Amended) A low profile computed tomography (CT) detector module for use in combination with an existing CT detector system, the detector system having a scintillator/photodiode array, the detector module comprising:

an x-ray transparent top layer;

an electrode on said top layer;

a block of direct conversion material, the electrode providing a common bias to the direct conversion material;

a substrate material electrically connected with the direct conversion material;

a signal processing chip electrically connected with the substrate; and

~~a connector element electrically connected to the substrate.~~

an end block support physically interposed between the electrode and the substrate material, said end block support both acting as a support member and containing a connector in electrical connection with the substrate and further signal processing hardware;

a rigid graphite bottom layer supporting the substrate material, the top layer and bottom layer forming a sandwich type construction with the electrode, direct conversion material or scintillator/photodiode array, the substrate material and signal processing chips being contained therebetween;

a plurality of the detector modules being arranged in a rigid array and being movable from a first position out of the x-ray beam, a second position wherein the low profile detector is partially within the x-ray beam and a third

position wherein the low profile detector fully overlaps the scintillator/photodiode detector array in the Z axis direction.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The low profile detector module of claim ~~[[4]]~~ 1 wherein the ~~direct conversion material~~ detector module is buttable.

6. (Currently Amended) The low profile detector module of claim ~~[[4]]~~ 1 wherein, the detector module also having a second end, the second end of the detector module is being supported by the direct conversion material interposed between the electrode and the substrate and the direct conversion material extends to the edge of the detector module.

7. (Original) The low profile detector module of claim ~~[[4]]~~ 1 wherein the detector module is not buttable.

8. (Currently Amended) The low profile detector module of claim 7 wherein the second end of the detector module has an end support interposed between the top x-ray translucent layer and the bottom graphite ~~layers~~layer.

9. (Cancelled)

10. (Currently Amended) A low profile detector module for a hybrid scintillation/direct conversion Computed Tomography (CT) imaging system, the CT imaging system having a scintillator/photodiode detector array, the detector module comprising:

a top x-ray translucent layer;

a bottom layer;
a high voltage electrode situated below the top layer;
a substrate situated over a portion of the bottom layer;
a direct conversion block interposed between and in electrical connection with
the electrode and part of the substrate;
an ASICS chip in electrical connection with the substrate;-and
said substratean end block support physically interposed between the electrode
and the substrate material, said end block support both acting as a
support member and containing a connector in electrical connection with
the substrate material and further signal processing hardware, the top
layer and bottom layer forming a sandwich type construction with the
electrode, direct conversion material or scintillator/photodiode array,
substrate and ASICS chips being contained therebetween;

a plurality of the detector modules being arranged in a rigid array and being
movable from a first position out of the x-ray beam, a second position wherein the low
profile detector is partially within the x-ray beam and a third position wherein the low
profile detector fully overlaps the scintillator/photodiode detector array in the Z axis
direction.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) The low profile detector module of claim [[13]]

10 wherein the ~~direct conversion material~~ detector module is buttable.

15. (Currently Amended) The low profile detector module of claim 14 wherein, the detector module also having a second end, the second end of the detector module ~~is being~~ supported by the direct conversion material interposed between the electrode and the substrate and the direct conversion material extends to the edge of the detector module.

16. (Original) The low profile detector module of claim 15 wherein the detector module is not buttable.

17. (Original) The low profile detector module of claim 16 wherein the second end of the detector module has an end support interposed between the top and bottom graphite layers.

18. (Currently Amended) A low profile detector module for a hybrid scintillation/direct conversion Computed Tomography (CT) imaging system, the CT imaging system having a scintillator/photodiode detector array, the detector module comprising:

- a top x-ray translucent layer having at least a bottom surface;
- a high voltage electrode deposited over the bottom surface of the top x-ray translucent layer;
- a bottom layer having at least a top surface;
- a substrate material situated over a portion of the top surface of the bottom layer;
- a direct conversion block interposed between and in electrical connection with the electrode and part of the substrate;
- an ASICS chip in electrical connection with the substrate; and
- said substrate in electrical connection with further signal processing hardware;

an end block support physically interposed between the electrode and the substrate material, said end block support both acting as a support member and containing a connector in electrical connection with the substrate material and further signal processing hardware, the top layer and bottom layer forming a sandwich type construction with the electrode, direct conversion material or scintillator/photodiode array, substrate and ASICS chips being contained therebetween;

a plurality of the detector modules being arranged in a rigid array and being movable from a first position out of the x-ray beam, a second position wherein the low profile detector is partially within the x-ray beam and a third position wherein the low profile detector fully overlaps the scintillator/photodiode detector array in the Z axis direction.

19. (Cancelled)

20. (Cancelled)

21. (Currently Amended) The low profile detector module of claim 20 wherein the ~~direct conversion material~~ detector module is buttable.

22. (Cancelled)

23. (Currently Amended) The low profile detector module of claim 22 wherein the substrate material is a silicon substrate.

24. (Currently Amended) The low profile detector module of claim 23 wherein the substrate material is ~~replaced with~~ a high density flex circuit.

25. (Currently Amended) The low profile detector module of claim ~~24~~ 23 wherein the substrate material is ~~replaced with~~ a multi-layer ceramic substrate.

26. (Original) The low profile detector module of claim 25 wherein the detector module is not buttable.

27. (Original) The low profile detector module of claim 26 wherein the second end of the detector module has an end support interposed between the top and bottom graphite layers.